

Cumulative Effects Assessment for the PDEA



Plenary Meeting, December 16, 2003

Topics to be Covered Today

Definitions

NEPA
CEQA
ESA

Guidance

Cumulative Effects Assessment

Project Information
Scoping
Affected Environment
Identification
Evaluation
Alternative modification

Direct Effects Definitions

NEPA: The CEQ's regulations for implementing NEPA states direct effects are caused by the action and occur at the same time and place as the action (40CFR1508). For example, grading an undisturbed area for construction of a parking lot.

CEQA: Direct or primary effects which are caused by the project and occur at the same time and place. Effects analyzed under CEQA must be related to a physical change (15358, CEQA guidelines).

ESA: Effects of the action refers to the direct and indirect effects of an action on the species or critical habitat, together with the effects of other activities that are interrelated or interdependent with that action, that will be added to the environmental baseline. The environmental baseline includes the past and present impacts of all Federal, State, or private actions and other human activities in the action area, the anticipated impacts of all proposed Federal projects in the action area that have already undergone formal or early section 7 consultation, and the impact of State or private actions which are contemporaneous with the consultation in process (50CFR402.02).

Indirect Effects Definition

NEPA : Caused by the action and are later in time or farther removed in distance, but are still reasonably foreseeable. They include growth inducing effects and other effects related to induced changes in the pattern of land use, populations density or growth rate, and related effects on air and water and other natural systems, including ecosystems (40CFR1508).

CEQA: Indirect or secondary effects which are caused by the project and are later in time or farther removed in distance, but are still reasonably foreseeable. Indirect or secondary effects may include growth-inducing effects and other effects related to induced changes in the pattern of land use, population density, or growth rate, and related effects on air and water and other natural systems, including ecosystems. Effects analyzed under CEQA must be related to a physical change (15358, CEQA guidelines).

ESA: Indirect effects are those that are caused by the proposed action and are later in time, but still are reasonably certain to occur (50CFR402.02).

Direct and Indirect Effects Evaluation

Hypothetical Example of an Impact Assessment

Proposed Alternative X

| Resource | Direct effect | Indirect Effect | Significant | Mitigation | Cumulative Effect |
|----------|---------------|-----------------|-------------|------------|-------------------------|
| Fish | Yes | Yes | Yes | Yes | Must Assess |
| Wetlands | Yes | No | Yes | Yes | Must Assess |
| Noise | Yes | No | No | No | No Assessment Necessary |

Cumulative Effects Definitions

NEPA: The CEQ's regulations for implementing NEPA define cumulative effects as the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-Federal) or person undertakes such other action.

CEQA : cumulative impacts refer to two or more individual effects which, when considered together, are considerable or which compound or increase other environmental impacts. The cumulative impact from several projects is the change in the environment which results from the incremental impact of the project when added to other closely related past, present, and reasonably foreseeable probable future projects (CEQA guidelines 15355).

ESA 50CFR 402.02 Cumulative effects are those effects of future State or private activities, not involving Federal activities, that are reasonably certain to occur within the action area of the Federal action subject to consultation.

Cumulative Effects Assessment Matrix for NEPA/CEQA

Derived from "Considering Cumulative Effects," Council on Environmental Quality
1997

| Resource | Past Actions | Present Actions | Proposed Action | Future Actions | Cumulative Effect |
|----------|------------------------------------|---|--------------------------------|--|--|
| Fish | 50% of 1950 population lost | 2% of fish population lost | 5% increase in fish population | 1% of fish population lost | 48% of 1950 fish population lost |
| Wetlands | 78% of presettlement wetlands lost | 1% of existing wetlands lost annually for 5 years | 0.5% of existing wetlands lost | 1.5% of existing wetlands lost annually for 10 years | 95% of presettlement wetlands lost in 10 years |

Cumulative Effect Assessment for Biological Assessment and ESA Consultation

Hypothetical Example of an ESA Cumulative Effects Assessment

Proposed Alternative X

| Resource | Past and Present Actions* | Baseline ** | Proposed Action | Future Actions | ESA Cumulative Effect |
|----------|---------------------------|-------------|--------------------------------|----------------------------|---|
| T&E Fish | 52% lost | 0% | 5% increase in fish population | 1% of fish population lost | 4% increase in baseline fish population |

* The total effects of all past activities, including effects of the past operation of the project, current non-federal activities, and federal projects with completed section 7 consultations, form the environmental baseline.

** To this baseline, future direct and indirect impacts of the operation over the new license or contract period, including effects of any interrelated and interdependent activities, and any reasonably certain future non-Federal activities (cumulative effects), are added to determine the total effect on listed species and their habitat.

Guidance on Cumulative Effects

- **CEQ - Council on Environmental Quality**
Handbook for Considering Cumulative Effects for NEPA compliance
- **CEQA** - Guidelines
- **FERC** - Guidelines for preparing Environmental assessments, 2001
- **DWR** - Guidance drafted by the ALP Task Force, June, 2002
- **USFWS** - Letter and Guidance to DWR, December, 2002
- **NOAA Fisheries** - Letter and Guidance to DWR, December 2002
- **Other** - Task Force Reports and recent Literature

Cumulative Effects Assessment, PDEA

1. Project Information: Detailed description of the Oroville Facilities
2. Scoping: Resource identification, geographic, and temporal bounds
3. Affected Environment: Describe baseline (current conditions)
4. Identification: Potential effects
5. Evaluation: Criteria and Thresholds
6. Alternative modification: Protection, Mitigation, or Enhancement

Cumulative Effects Assessment, PDEA

1. **Project Information:** Detailed description of the Oroville Facilities -
 - **Description of Proposed Project/Action and PM&Es**
 - **Need for Oroville Facilities**
 - **Existing Constraints:** water rights, maintenance activities, existing agreements, existing Biological Opinions

Cumulative Effects Assessment, PDEA

2. Scoping

Resource Identification

Geographic Bounds

Temporal Bounds

Cumulative Effects Assessment, PDEA

Scoping, Resource Identification

The resource identification: Through the collaborative, DWR is conducting 72 studies that focus on providing information related to potentially affected resources.

Collaborative Workgroup Process Identified:

Geomorphology

Water Quality – water temperature

Aquatic Resources – fish passage/hatchery

Terrestrial – wildlife and botanical

Threatened and Endangered Species

Cumulative Effects Assessment, PDEA

Scoping: Geographic bounds

- CEQ -

Project Impact Zone — determine the areas that could be affected by the proposed action

- FERC —

River Basin — may be river basin or mainstem river for some resources or the project effect on an affected resource

- ALP Task Force —

Current Studies — should provide reasonable information on potentially affected resource

Cumulative Effects Assessment, PDEA

Scoping: Temporal bounds

- CEQ –

Identification of past, present, and future actions is critical to establish appropriate geographic and time boundaries

- FERC –

Temporal scope includes past, present, future action.
Generally new license term.

- ALP Task Force -

Consider other past, present, and reasonably foreseeable future projects and activities.

Cumulative Effects Assessment, PDEA

3. Affected Environment: Baseline –

- Establish environmental reference point
- Describe events that altered affected resources
- Note residual effects from past that continue to influence current baseline

FERC Guidance describes two parts:

- A discussion of past actions
- The resource as it is today

CEQ - Consider Physical, Biological, and Human Communities relevant to Direct, Indirect, and Cumulative effects

Cumulative Effects Assessment, PDEA

4. Identification: Potential Direct, Indirect, and Cumulative effects –

- CEQ – development of matrix tables
- FERC – suggests preparing charts and tables for assessing potential impacts

Cumulative Effects Assessment, PDEA

5. Evaluation: Criteria and thresholds of significance

- Can be qualitative or quantitative
- Based on context and intensity
- Related to cause-and-effect relationships

Cumulative Effects Assessment, PDEA

6. Alternative modification: Protection, Mitigation, or Enhancement (Resource Actions)
 - CEQ – project proponent should avoid/minimize
 - FERC – project alternatives modified as information becomes available
 - ALP Collaborative – 72 studies

Conclusions

- Presented method complies with CEQ (NEPA), CEQA, and FERC guidance
- Incorporates NOAA Fisheries and USFWS guidance
- Utilizes recommendations by ALP Task Force
- ALP Collaborative – 72 studies
- Identifies and categorizes cumulative effects on Affected Resources using matrix approach
- Facilitates consistent treatment of Affected Resources